Claims

1. A method of delivering video content through a residential broadband network, comprising:

receiving a request for video content from a remote client;

establishing an application session on a first processor, and within the first processor,

accessing a video content source to retrieve the requested video content;

compressing the retrieved video content to create a spatially compressed frame of video content ,

signaling to a second processor of the existence of the spatially compressed frame of video content,

and within the second processor;

temporally, compressing the spatially compressed frame of video content to create at least one temporally compressed frame of video content;

joining the spatially compressed frame of video content with the temporally compressed frame of video content to create a data stream of compressed video content;

outputting the data stream of compressed video content to the remote client.

2. The method of claim 1 further comprising the step of,

communicating a combination of a unique channel and Program Identifier that carries the data stream of compressed video content to the remote client.

3. The method of claim 2 wherein the spatially compressed frame of video content comprises an MPEG2 I-frame.

4. The method of claim 2 wherein

the at least one temporally compressed frame of video content comprises an MPEG2 B-frame.

5. The method of claim 2 wherein

the at least one temporally compressed frame of video content comprises an MPEG2 P-frame.

6. The method of claim 2 wherein

the data stream of compressed video content comprises an MPEG2 Transport Stream Group of Pictures.

7. The method of claim 1 wherein

the application session on the first processor comprises an Internet application session.

8. The method of claim 7 wherein

the Internet application session comprises a Internet Browser application session.

9. The method of claim 1 wherein the step of accessing a video content source to retrieve the requested video content further comprises,

accessing a switched network to retrieve the requested video content.

10. The method of claim 9 wherein

the switched network comprises the Internet.

11. The method of claim 1 wherein the step of accessing a video content source to retrieve the requested video content further comprises,

accessing a video-on-demand server to retrieve the requested video content.

12. The method of claim 1 wherein

the broadband network comprises a cable-television residential broadband network.

13. The method of claim 1 wherein the step of signaling to the second processor of the existence of the spatially compressed frame of video content comprises,

outputting from the first processor, the spatially compressed frame of video content, to the second processor.

14. The method of claim 1 wherein the step of signaling to the second processor of the existence of the spatially compressed frame of video content comprises,

depositing from the first processor to a memory location the spatially compressed frame of video content, and;

setting an update flag associated with the memory location.

15. A method of delivering motion video or audio content through a broadband network, comprising:

receiving a request for motion video or audio content from a remote client;

establishing an application session on a first processor, and within the first processor,

accessing a motion video or audio content source to retrieve the requested motion video or audio content;

rendering a frame of video that contains a display window with coordinates;

signaling to a second processor of the existence of the motion video or audio content and the coordinates,

and from the second processor;

outputting the data stream of compressed motion video or audio content to the remote client for display within the coordinates of the display window.

16. The method of claim 15 wherein,

the data stream of compressed motion video or audio comprises an MPEG2 Transport Stream.

17. The method of claim 16 further comprising the step of,

communicating a combination of a unique channel and Program Identifier that carries the data stream of compressed motion video or audio content to the remote client.

18. A processing engine for the delivery of video content through a broadband network, comprising:

a first processor, that is under program control to, access and retrieve video content requested by a remote client through the broadband network, and spatially compress the retrieved video content to form a spatially compressed frame of the video content; coupled to

a second processor, that is under program control to, temporally compress the spatially compressed frame of the video content to form a plurality of temporally compressed frames representing the video content, and merge the spatially compressed frame of the video content and the plurality of the temporally compressed frames of the video content to render a stream of compressed frames representing the video content.

19. The processing engine in claim 18 wherein,

the first processor and the second processor each belong to at least one processing node within an N^M array of processing nodes, where N refers to the number of processing nodes within a processing node row or column and M refers to the number of orthogonal dimensions of the array of processing nodes.

20. The processing engine in claim 19 wherein,

N is at least four and M is at least two.

21. The processing engine in claim 19 wherein,

each of the processing nodes are orthogonally coupled and support bi-directional communications between orthogonal processing nodes.

22. The processing engine in claim 21 wherein,

each processing node comprises M*(N-1) communication ports that are coupled with the communication ports of the orthogonal processing nodes.

23. The processing engine in claim 21 wherein,

bi-directional communication between processing nodes comprises traversal of the physical transport layers of the processing nodes.

24. The processing engine of claim 23 wherein,

the physical transport layer consists of a physical media selected from the group consisting of;

fiber-optics, a databus, twisted pair, or microwave wave guide.

25. The processing engine of claim 19 wherein

each processing node comprises at least a bi-directionally coupled pair of processing units.

26. The processing engine of claim 25 wherein

each processing unit comprises a bi-directionally coupled dual-CPU within the same package.

27. The processing engine of claim 25 further comprising,

a communications processing unit that is bi-directionally coupled to the processing units.

28. The processing engine of claim 19 wherein,

at least a portion of the processing nodes are each under program control to, exclusively access and retrieve through a switched network video content requested by a plurality of remote clients, and spatially compress the retrieved video content to form the spatially compressed frame of the video content

29. The processing engine of claim 19 wherein,

at least a portion of the processing nodes exclusively temporally compress the spatially compressed frames of the video content requested by the plurality of remote clients to form the plurality of temporally compressed frames representing the video content, and merge the spatially compressed frame of the video content and the plurality of the temporally compressed frames of the video content to render the stream of compressed frames representing the video content.

30. The processing engine of claim 28 wherein,

at least one processing node performs a load balancing function to equally distribute the plurality of remote clients requests across the portion of processing nodes.

31. A processing engine architecture for use with the delivery of audio or video content over a broadband network, comprising:

an N^M array of processing nodes, where N is the number of processing nodes along M dimensions of the array of processing nodes; each processing node further comprising;

M*(N-1) communication ports that are bi-directionally coupled to the communication ports of orthogonally situated processing nodes.

32. The processing engine architecture in claim 31 wherein,

at least a portion of the processing nodes further have at least an additional communication port that is connectable to an external switched network.

33. The processing engine architecture in claim 31 wherein,

processing nodes are bi-directionally coupled using at least one physical media selected from the group consisting of; microwave wave guides, fiber, a databus.

34. The processing engine architecture in claim 31 wherein,

communication between the processing nodes comprises traversal of the physical transport layer of the processing nodes.

35. The processing engine architecture in claim 31 wherein,

at least a portion of the processing nodes comprise a pair of bi-directionally coupled processing units.

36. The processing engine architecture in claim 35 wherein,

the bi-directionally coupled processing units comprise dual-CPU within the same physical package.